

**SOT-23 Plastic-Encapsulate MOSFETS**  
P-Channel Enhancement Mode Field Effect Transistor

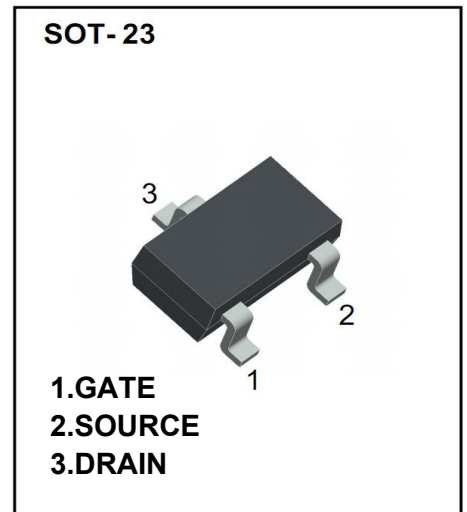
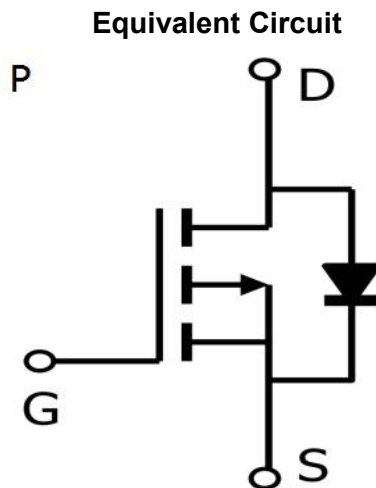
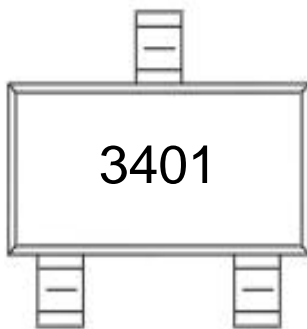
**FEATURES**

- Lead free product is acquired
- Surface mount package

**APPLICATION**

- Load Switch and in PWM applications

**MARKING**



**Maximum ratings ( T<sub>a</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DS</sub>	-30	V
Gate-Source Voltage	V <sub>GS</sub>	±12	V
Continuous Drain Current	I <sub>D</sub>	-4.2	A
Power Dissipation	P <sub>D</sub>	350	mW
Thermal Resistance from Junction to Ambient (t<5s)	R <sub>θJA</sub>	357	°C/W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55~+150	°C

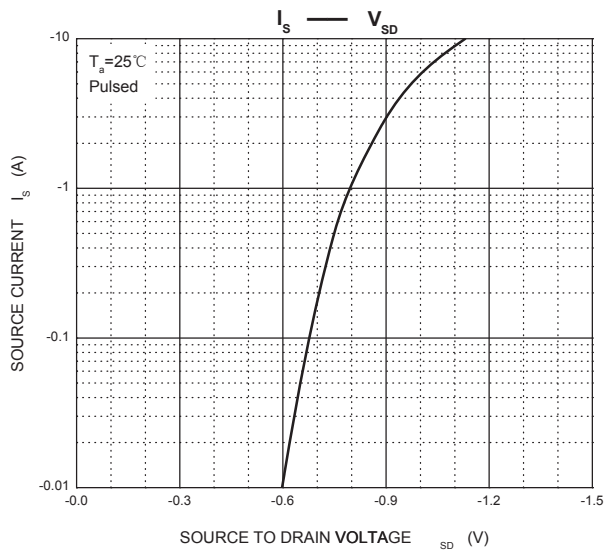
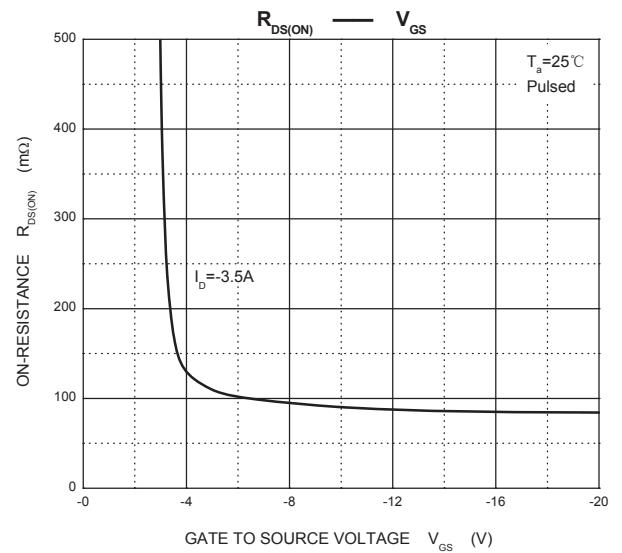
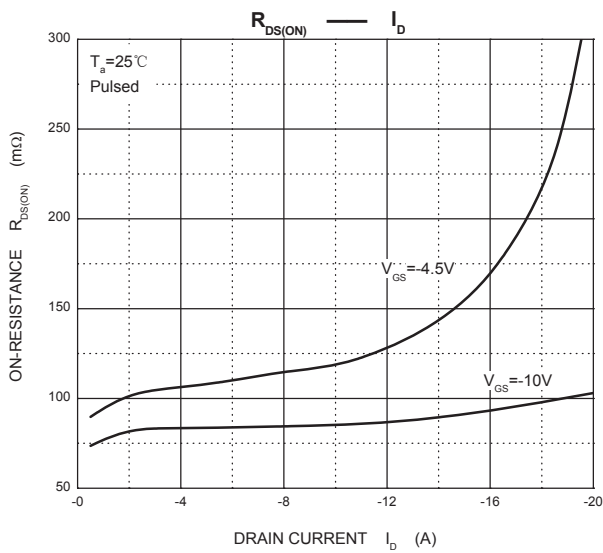
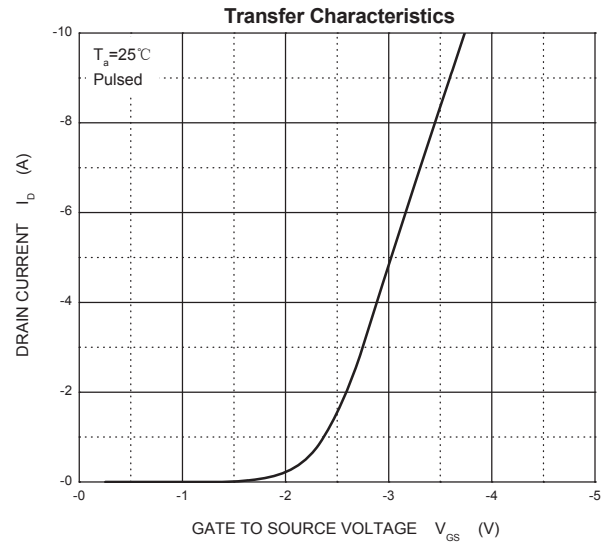
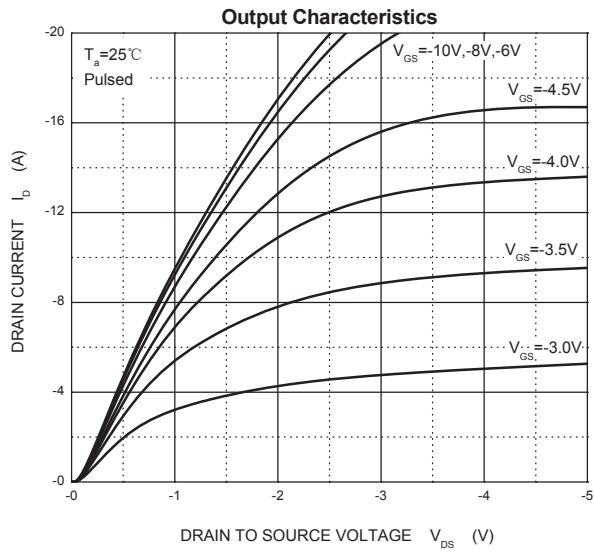
**MOSFET ELECTRICAL CHARACTERISTICS  $T_a=25^\circ\text{C}$  unless otherwise specified**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Off characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-30			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = -24V, V_{GS} = 0V$			-1	$\mu A$
Gate-source leakage current	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$			$\pm 100$	nA
<b>On characteristics</b>						
Drain-source on-resistance (note 1)	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -4.2A$		50	65	m $\Omega$
		$V_{GS} = -4.5V, I_D = -4A$		60	75	m $\Omega$
		$V_{GS} = -2.5V, I_D = -1A$		75	90	m $\Omega$
Forward tranconductance (note 1)	$g_{FS}$	$V_{DS} = -5V, I_D = -5A$	7			S
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.7	-0.9	-1.3	V
<b>Dynamic characteristics (note 2)</b>						
Input capacitance	$C_{iss}$	$V_{DS} = -15V, V_{GS} = 0V, f = 1MHz$		954		pF
Output capacitance	$C_{oss}$			115		pF
Reverse transfer capacitance	$C_{rss}$			77		pF
<b>Switching characteristics (note 2)</b>						
Turn-on delay time	$t_{d(on)}$	$V_{GS} = -10V, V_{DS} = -15V,$ $R_L = 3.6\Omega, R_{GEN} = 6\Omega$			6.3	ns
Turn-on rise time	$t_r$				3.2	ns
Turn-off delay time	$t_{d(off)}$				38.2	ns
Turn-off fall Time	$t_f$				12	ns
<b>Drain-source diode characteristics and maximum ratings</b>						
Diode forward voltage (note 1)	$V_{SD}$	$I_S = -1A, V_{GS} = 0V$			-1	V

**Note :**

1. Pulse Test : Pulse width  $\leq 300\mu s$ , duty cycles  $\leq 2\%$ .
2. These parameters have no way to verify.

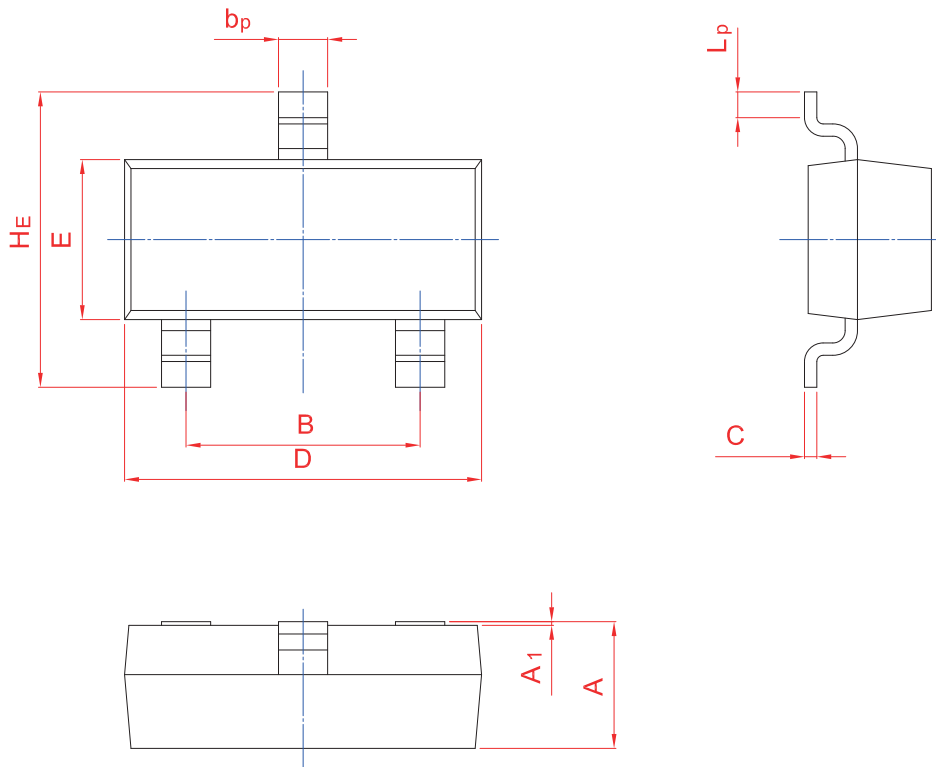
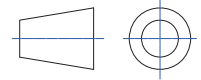
Typical Characteristics



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	$b_p$	C	D	E	$H_E$	$A_1$	$L_p$
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20

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